IN THE CLAIMS

Please replace the claims as filed with the claims set forth below. This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)

2. (Currently Amended) An optical device comprising:

a multimode optical fiber; and

means for averaging a modal noise induced signal level variation of light propagating within the multimode optical fiber ~~The optical device of claim 1~~ wherein the means for averaging comprises one of:

means for cyclically varying an index of refraction of the multimode optical fiber over a select period of time; and

means for scrambling a light distribution within the multimode optical fiber.

3. (Currently Amended) The optical device of claim ~~1~~ 2 wherein the means for averaging comprises one of:

means for cyclically varying the temperature of the multimode optical fiber; and

means for cyclically manipulating the multimode optical fiber.

4. (Original) The optical device of claim 3 wherein the means for cyclically manipulating the multimode optical fiber comprises an apparatus configured to perform at least one of:

twisting the multimode optical fiber;

stretching the multimode optical fiber;

shaking the multimode optical fiber.

5. (Original) The optical device of claim 3 wherein the means for cyclically varying the temperature of the multimode optical fiber comprises a thermal element in thermal communication with the multimode optical fiber, the thermal element comprising at least one of a heater, a cooler, a source of fluid heated above ambient temperature and a source of fluid cooled below ambient temperature.

6. (Original) The optical device of claim 3 further comprising:

a temperature sensor in thermal contact with the multimode optical fiber; and

a controller receiving input from the temperature sensor and controlling the means for cyclically varying the temperature of the multimode optical fiber.

7. (Original) A method of time averaging modal noise induced signal strength variations in multimode optical fiber having an input and an output, the method comprising:

coupling light to the input of the multimode optical fiber;

cyclically varying an index of refraction of the multimode optical fiber; and

receiving the light at the output of the multimode optical fiber.

8. (Original) The method of claim 7 wherein the index of refraction of the multimode optical fiber is varied by one of:

cyclically varying the temperature of the multimode optical fiber; and

cyclically manipulating the multimode optical fiber.

9. (Original) The method of claim 8 wherein the step of cyclically varying the temperature of the multimode optical fiber comprises providing a thermal component in thermal communication with the multimode optical fiber.

10. (Original) The method of claim 9 further comprising:

providing a temperature sensor in thermal communication with the multimode optical fiber; and

controlling the thermal component with a controller receiving input from the temperature sensor.

11. (Original) The method of claim 8 wherein the step of cyclically manipulating the multimode optical fiber comprises at least one of:

twisting the multimode optical fiber;

stretching the multimode optical fiber;

shaking the multimode optical fiber.

12-24. (Cancelled)

25. (Currently Amended) A combustion sensing apparatus comprising a catch-side optical system comprising:

a multimode optical fiber; and

means for averaging a modal noise induced signal level variation of light propagating within the multimode optical fiber ~~The combustion sensing apparatus of claim 24~~ wherein the means for averaging comprises one of:

means for cyclically varying an index of refraction of the multimode optical fiber over a select period of time; and

means for scrambling a light distribution within the multimode optical fiber.

26. (Currently Amended) The combustion sensing apparatus of claim ~~24~~ 25 wherein the means for averaging comprises one of:

means for cyclically varying the temperature of the multimode optical fiber; and

means for cyclically manipulating the multimode optical fiber.

27. (Original) The combustion sensing apparatus of claim 26 wherein the means for cyclically manipulating the multimode optical fiber comprises an apparatus configured to perform at least one of:

twisting the multimode optical fiber;

stretching the multimode optical fiber;

shaking the multimode optical fiber.

28. (Original) The combustion sensing apparatus of claim 26 wherein the means for cyclically varying the temperature of the multimode optical fiber comprises a thermal element in thermal communication with the multimode optical fiber comprising at least one of a heater, a cooler, a source of fluid heated above ambient temperature and a source of fluid cooled below ambient temperature.